

Comune di Piombino



VARIANTE AL P.R.G. E AL P.S. D'AREA PORTUALITA'. DISTRETTO DELLA NAUTICA RIASSETTO DELLE AREE INDUSTRIALI E INFRASTRUTTURE CONNESSE

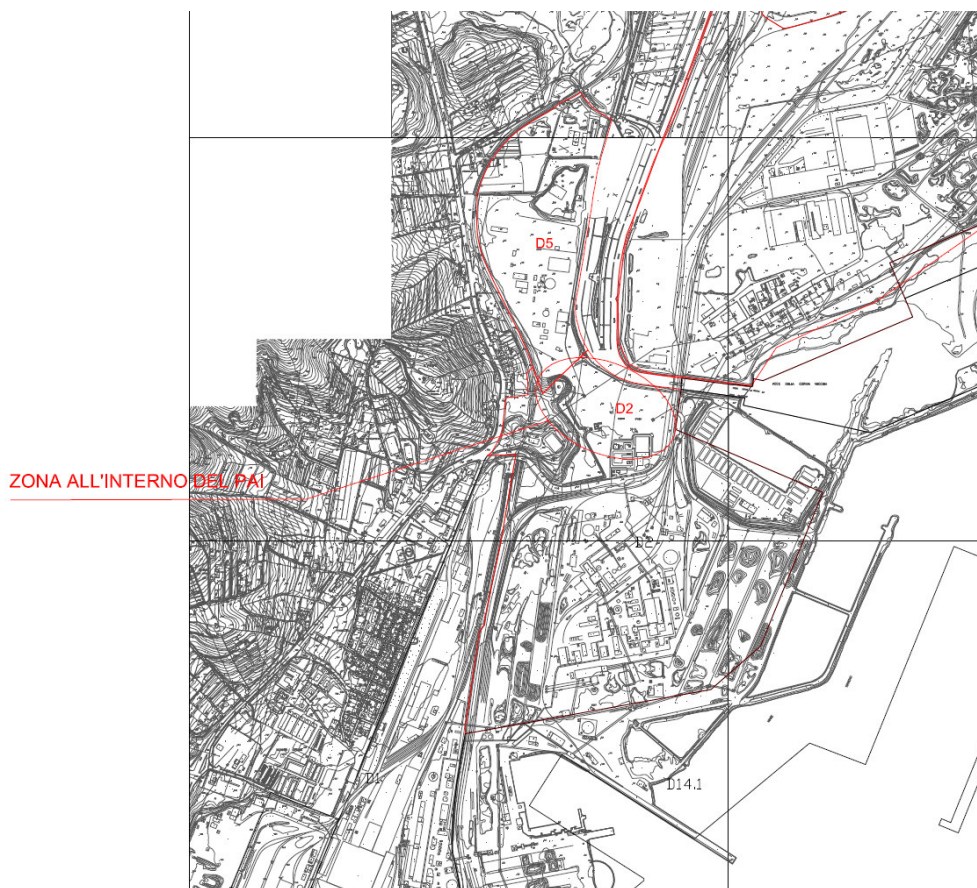
INTEGRAZIONE 2: considerazioni sulle aree D2 e D5

Il tecnico incaricato:	Data:	Versione:
Ing. Stefano Pagliara	marzo 2009	1.0.0309

VARIANTE AL P.R.G. E AL P.S. D'AREA PORTUALITA'. DISTRETTO DELLA NAUTICA RIASSETTO DELLE AREE INDUSTRIALI E INFRASTRUTTURE CONNESSE INTEGRAZIONE: considerazioni sulle aree D2 e D5

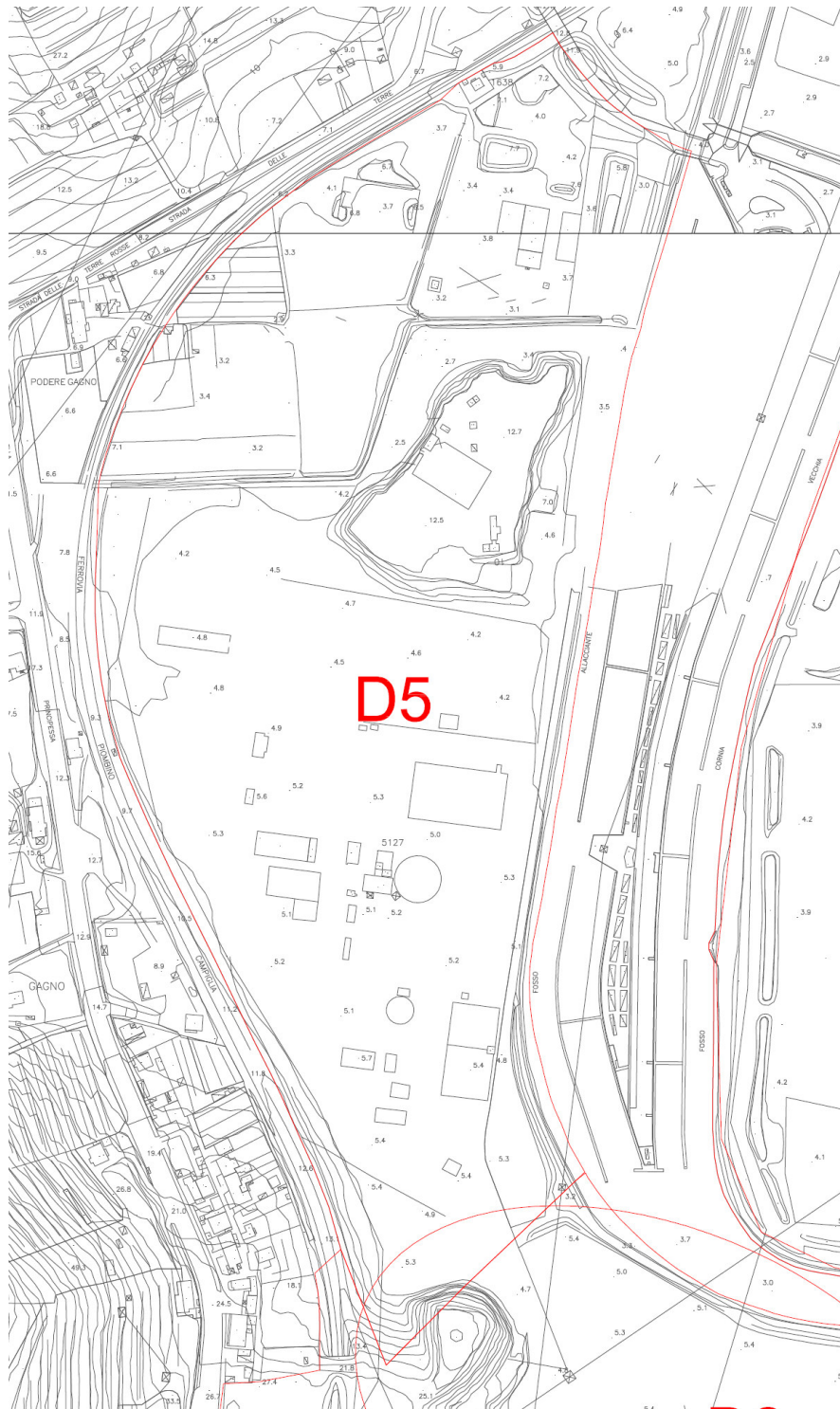
PREMESSA

La presente integrazione e' relativa all'area D5 e alla parte dell'area D2 inclusa nel PAI come area PIE.



Aree in studio

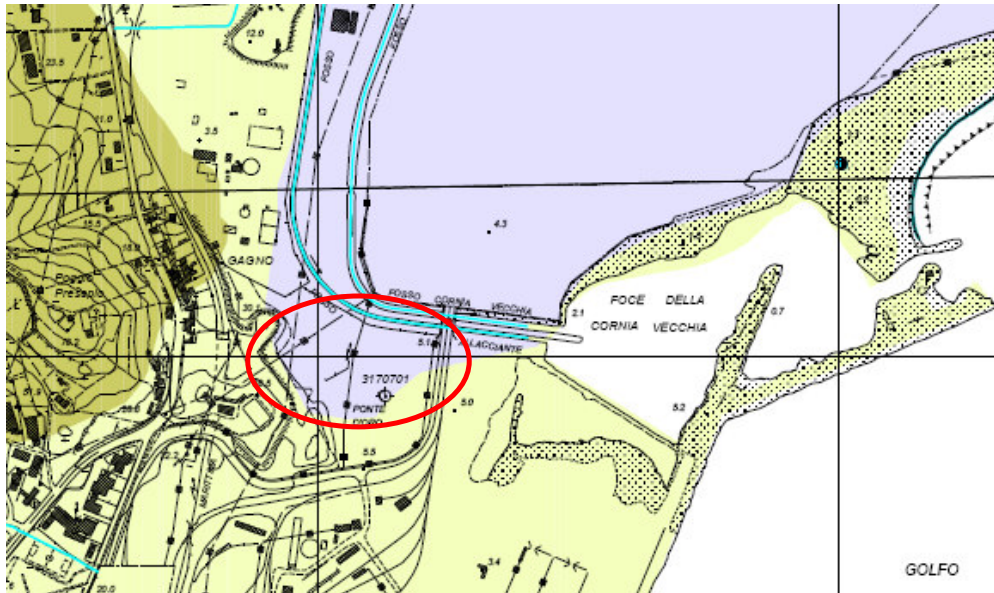
Area D5



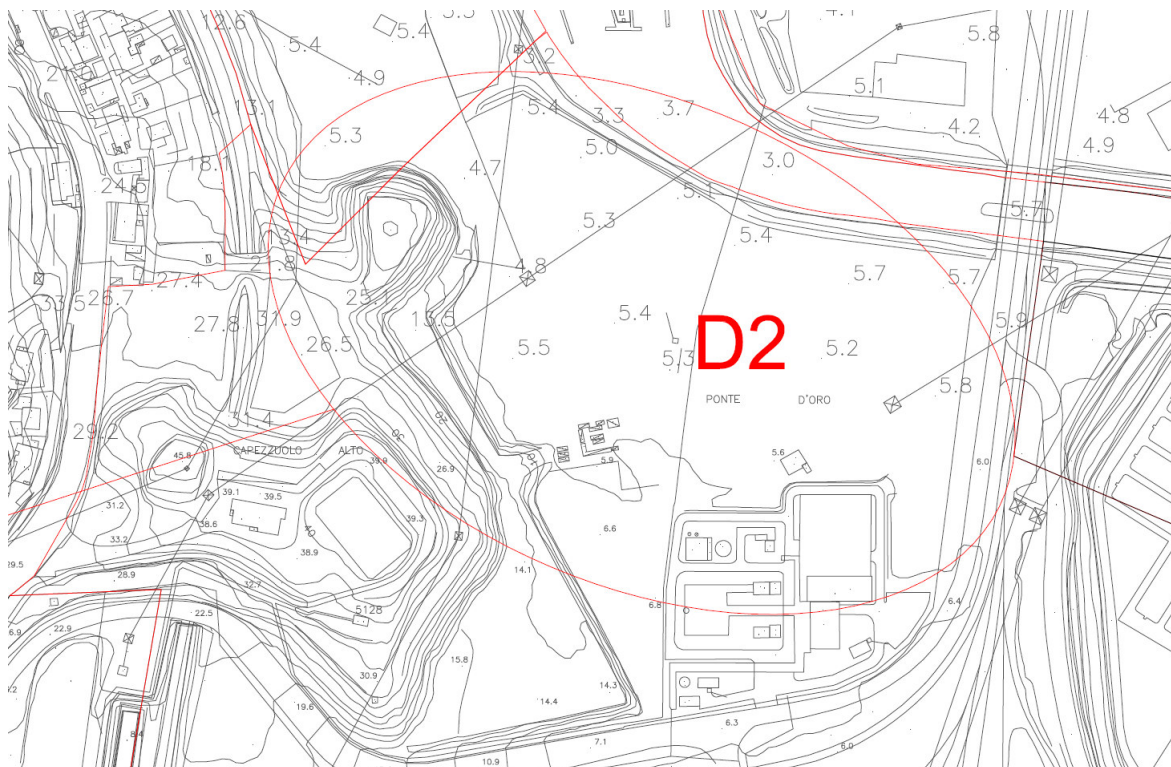
Ing. Stefano Pagliara, Via Borsellino, 14 – 56100 – Pisa tel. 050 830856

Il piccolo corso d'acqua a ovest del podere Gagno e passante all'interno dell'area D5 potrà essere oggetto di risezionamento e adeguamento degli attraversamenti al fine di adeguare la capacità alle portate massime transitabili.

Area D2 ricadente in zona PIE



PAI nell'area in oggetto all'interno dell'area D2



Quote topografiche nell'area in oggetto

Anche tale area risulta morfologicamente elevata (quote maggiori di 5 m. s.l.m.) e, dopo i lavori di risezionamento della parte terminale dei canali Cornia Vecchio e Allacciante risulta sicuramente non esondabile.

Calcoli idraulici

In appendice si riportano i calcoli idraulici del tratto finale dei corsi d'acqua Cornia Vecchia e Allacciante. Le portate di calcolo sono state ricavate dallo studio del Circolo nautico Ponted'oro utilizzato per l'allargamento dei corsi d'acqua avvenuto dopo il 2000:

“

Il recente ampliamento del punto di ormeggio e delle opere accessorie in ossequio a piano attuativo dell'area situata in Loc. Terre Rosse, realizzato dalle due società di gestione "Soc. CPC S.r.l." e della Cooperativa "Circolo Nautico Ponted'oro", ha visto l'adeguamento e la messa in sicurezza dei due tratti terminali dei corsi d'acqua per le seguenti portate che sono state omologate dagli Uffici Regionali competenti, ai sensi R.D. 523/1904 , rispettivamente per tempi di ritorno centenari e due centenari.

Fosso	Superrficie Bacino (kmq)	Q100 (mc/sec)	Q200 (mc/sec)
Cagliana	8.66	67	76
Corniaccia	25.04	80	92

”

La verifica evidenzia come le sezioni attuali siano ampiamente sufficiente allo smaltimento delle portate con tempi di ritoeno duecentennali. Le uniche insufficienze si hanno nei tratti a monte, delle aree D2 e D5 considerate.

Pisa, 28 marzo 2009

Prof. Ing. Stefano Pagliara

Verifica per $T_r=200$ anni

Portate :

Cornia vecchia = 92 mc/s

Allacciante = 76 mc/s

Come da omologazione progetto “circolo nautico ponte d’oro”

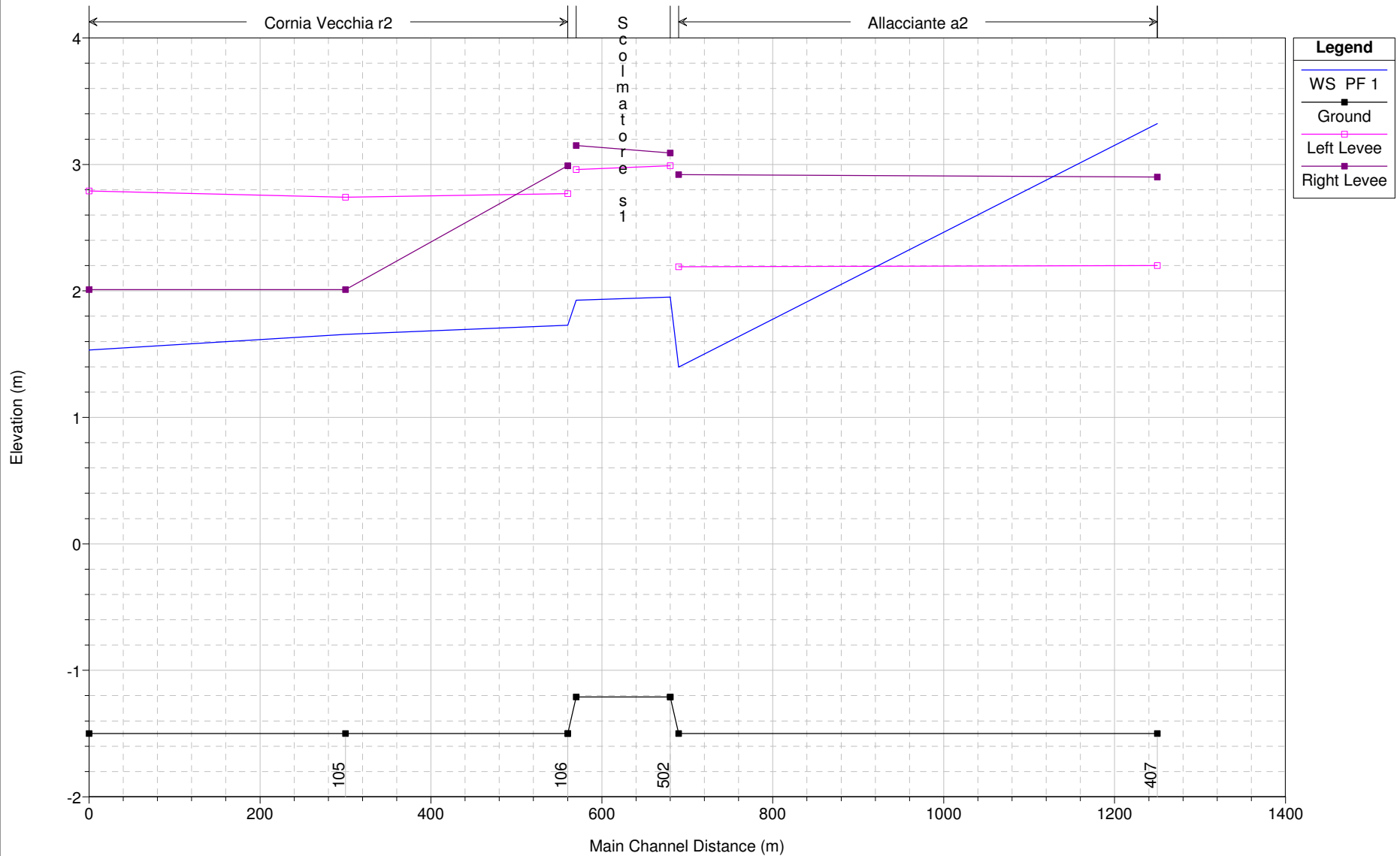
Scolmatore = 36 mc/s

Tratto finale = 168 mc/s



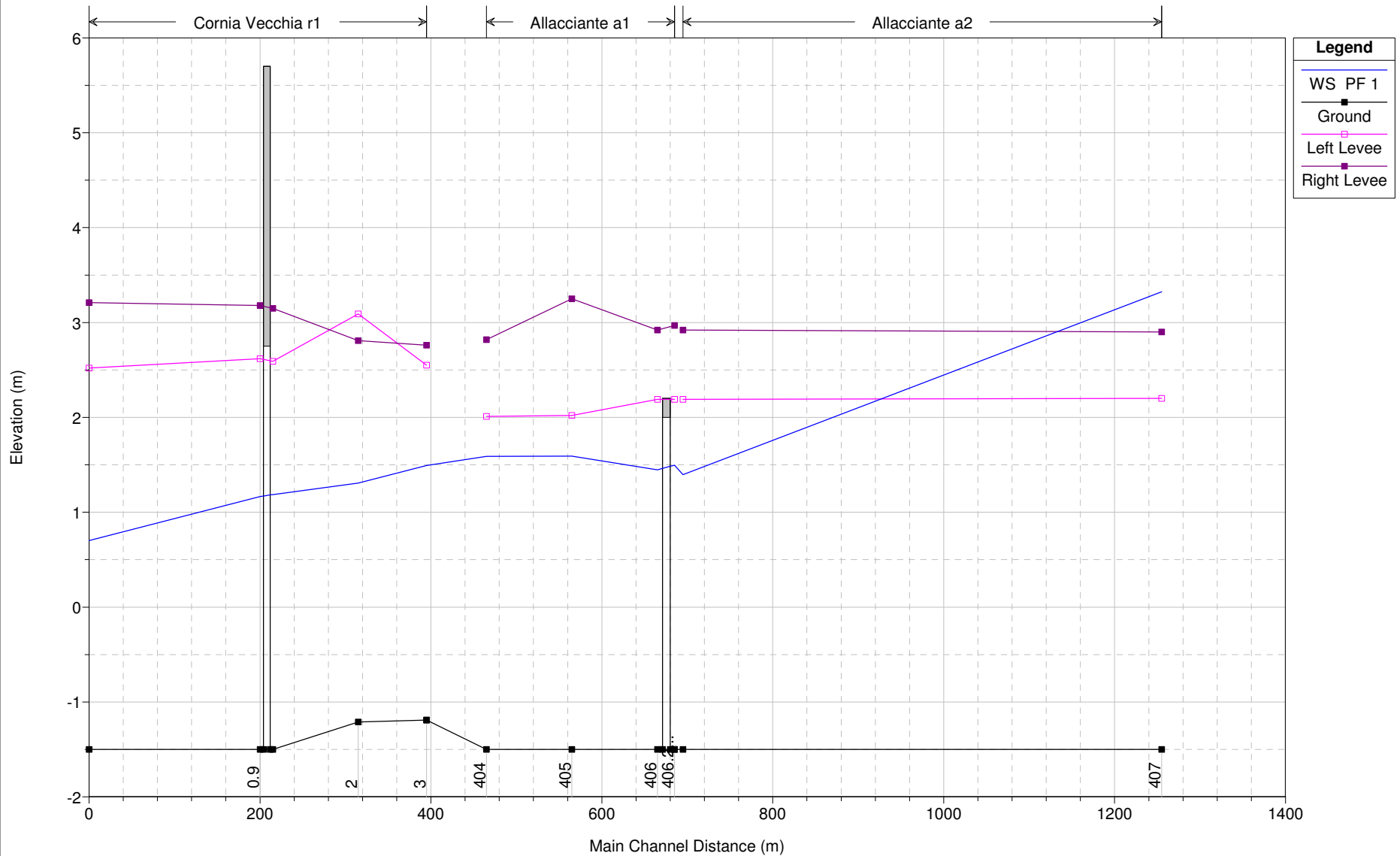
Cornia-vecchia-mar09 Plan: Plan 01 3/30/2009 8:26:02 AM

Geom: corn1 Flow: corn-vec-Tr200



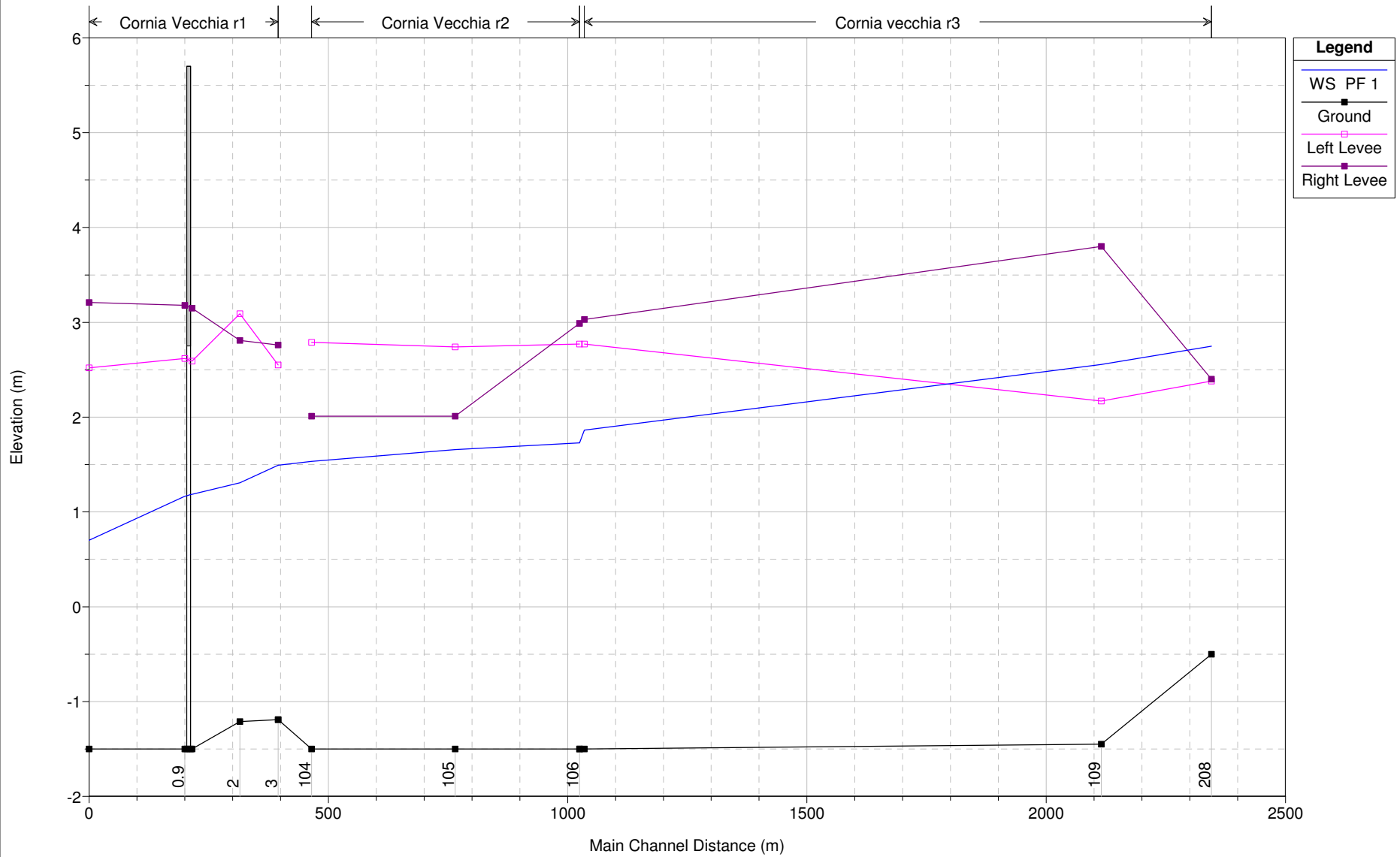
Cornia-vecchia-mar09 Plan: Plan 01 3/30/2009 8:26:02 AM

Geom: corn1 Flow: corn-vec-Tr200



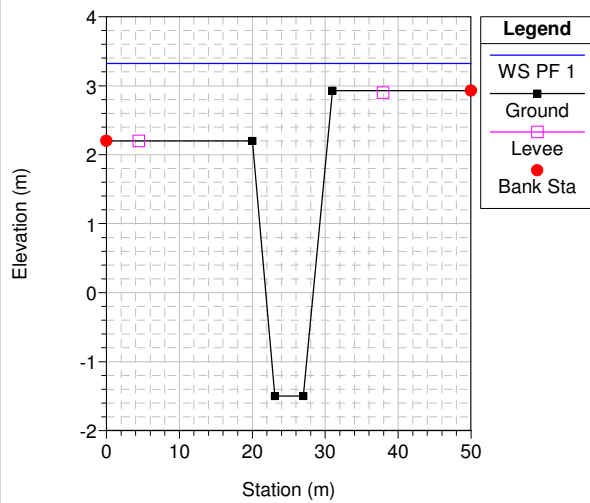
Cornia-vecchia-mar09 Plan: Plan 01 3/30/2009 8:26:02 AM

Geom: corn1 Flow: corn-vec-Tr200



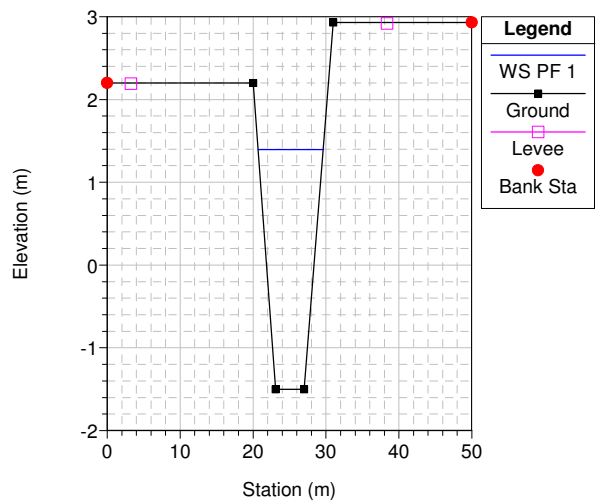
Cornia-vecchia-mar09 Plan: Plan 01 3/30/2009 8:26:02 AM

Geom: corn1 Flow: corn-vec-Tr200
River = Allacciante Reach = a2 RS = 407 fittizia



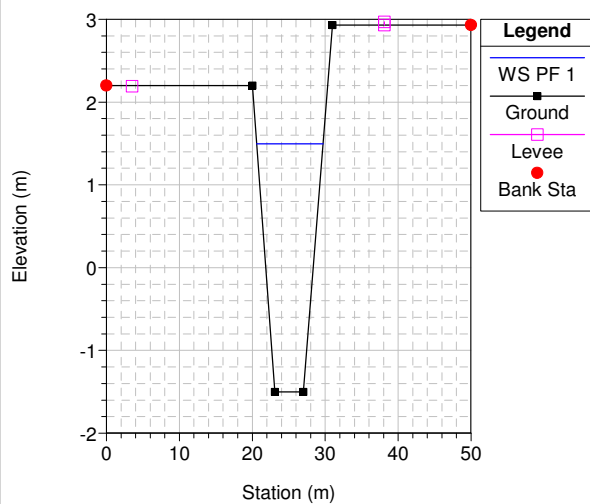
Cornia-vecchia-mar09 Plan: Plan 01 3/30/2009 8:26:02 AM

Geom: corn1 Flow: corn-vec-Tr200
River = Allacciante Reach = a2 RS = 406.5



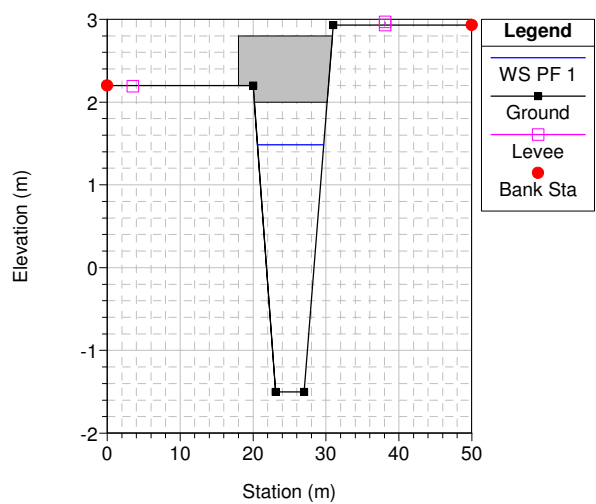
Cornia-vecchia-mar09 Plan: Plan 01 3/30/2009 8:26:02 AM

Geom: corn1 Flow: corn-vec-Tr200
River = Allacciante Reach = a1 RS = 406.2



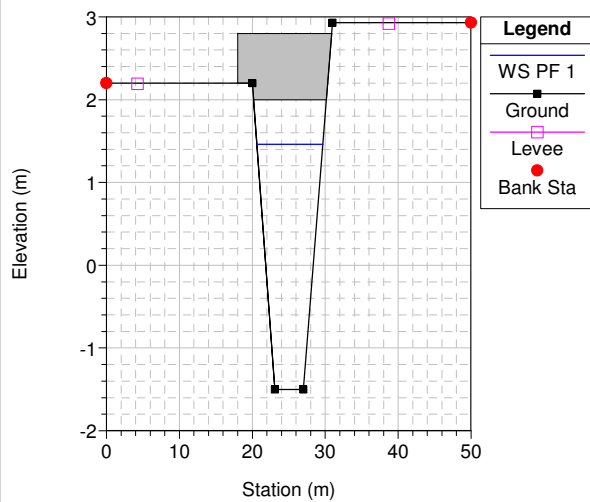
Cornia-vecchia-mar09 Plan: Plan 01 3/30/2009 8:26:02 AM

Geom: corn1 Flow: corn-vec-Tr200
River = Allacciante Reach = a1 RS = 406.1 BR



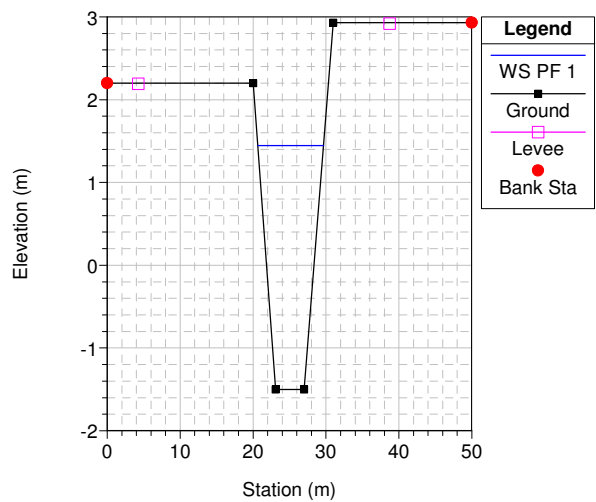
Cornia-vecchia-mar09 Plan: Plan 01 3/30/2009 8:26:02 AM

Geom: corn1 Flow: corn-vec-Tr200
River = Allacciante Reach = a1 RS = 406.1 BR



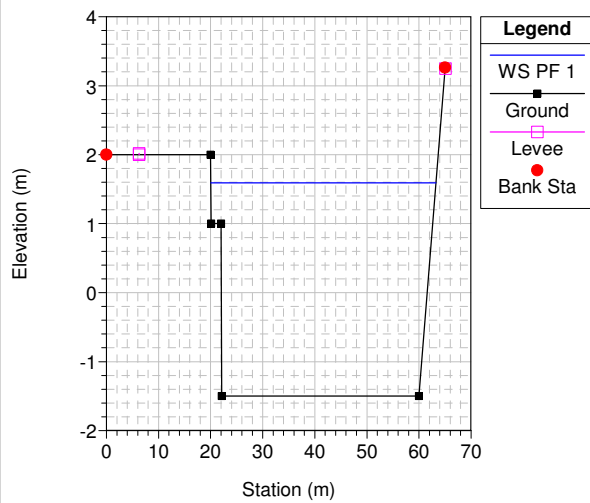
Cornia-vecchia-mar09 Plan: Plan 01 3/30/2009 8:26:02 AM

Geom: corn1 Flow: corn-vec-Tr200
River = Allacciante Reach = a1 RS = 406 sez6



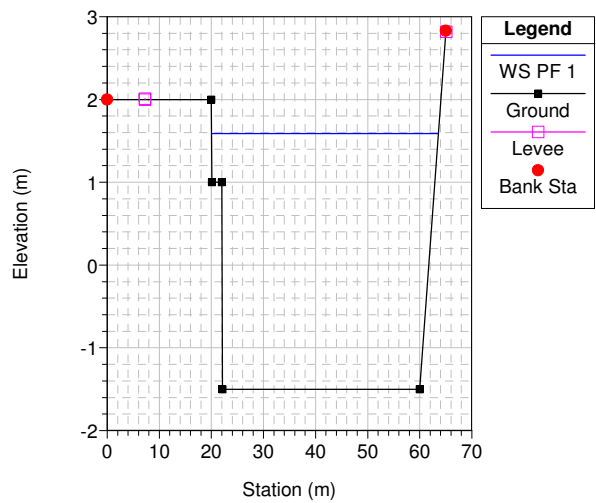
Cornia-vecchia-mar09 Plan: Plan 01 3/30/2009 8:26:02 AM

Geom: corn1 Flow: corn-vec-Tr200
River = Allacciante Reach = a1 RS = 405 sez5



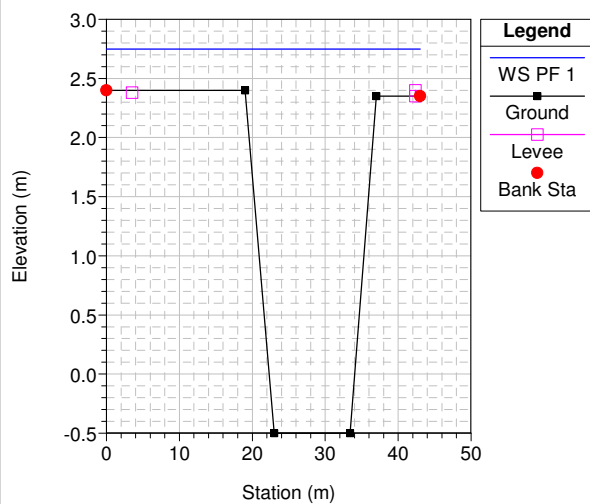
Cornia-vecchia-mar09 Plan: Plan 01 3/30/2009 8:26:02 AM

Geom: corn1 Flow: corn-vec-Tr200
River = Allacciante Reach = a1 RS = 404 sez4



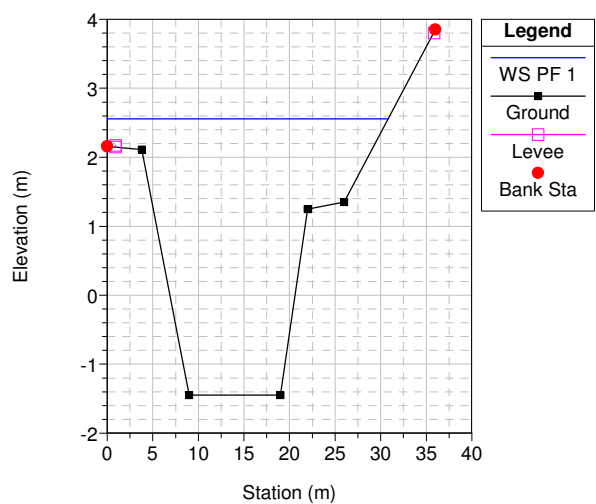
Cornia-vecchia-mar09 Plan: Plan 01 3/30/2009 8:26:02 AM

Geom: corn1 Flow: corn-vec-Tr200
River = Cornia vecchia Reach = r3 RS = 208



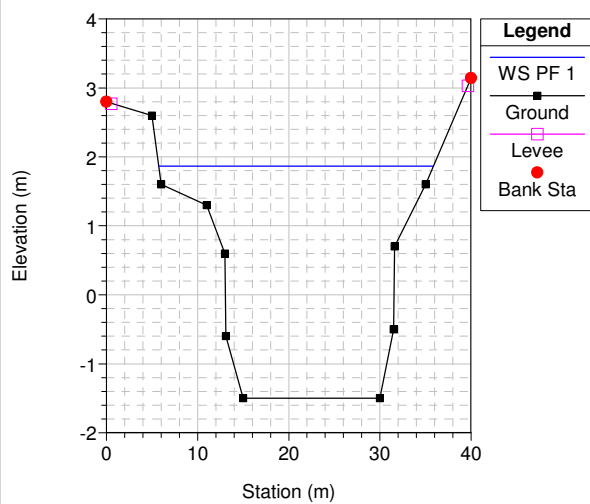
Cornia-vecchia-mar09 Plan: Plan 01 3/30/2009 8:26:02 AM

Geom: corn1 Flow: corn-vec-Tr200
River = Cornia vecchia Reach = r3 RS = 109



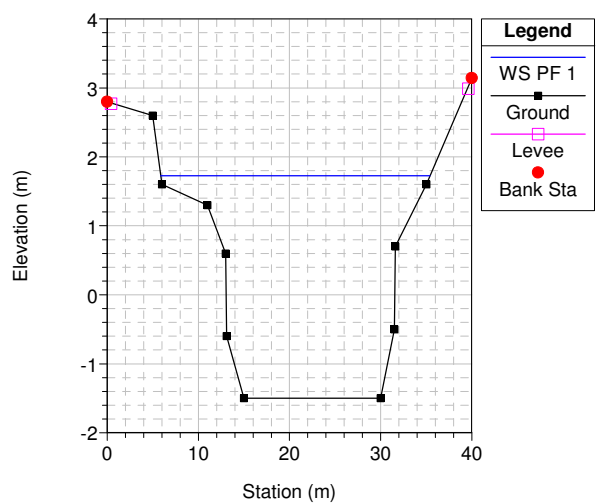
Cornia-vecchia-mar09 Plan: Plan 01 3/30/2009 8:26:02 AM

Geom: corn1 Flow: corn-vec-Tr200
River = Cornia vecchia Reach = r3 RS = 106 sez6



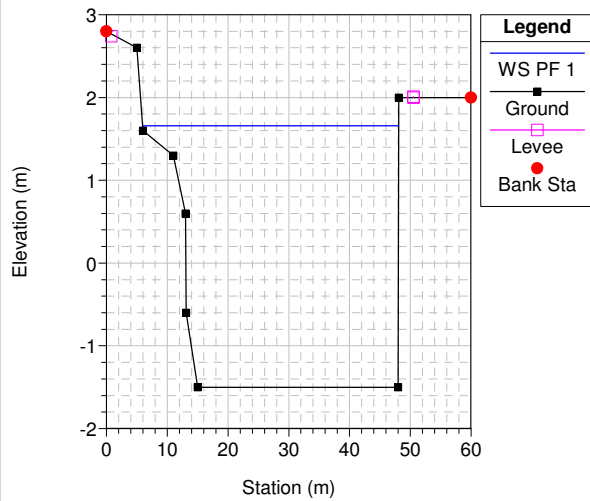
Cornia-vecchia-mar09 Plan: Plan 01 3/30/2009 8:26:02 AM

Geom: corn1 Flow: corn-vec-Tr200
River = Cornia Vecchia Reach = r2 RS = 106 sez6



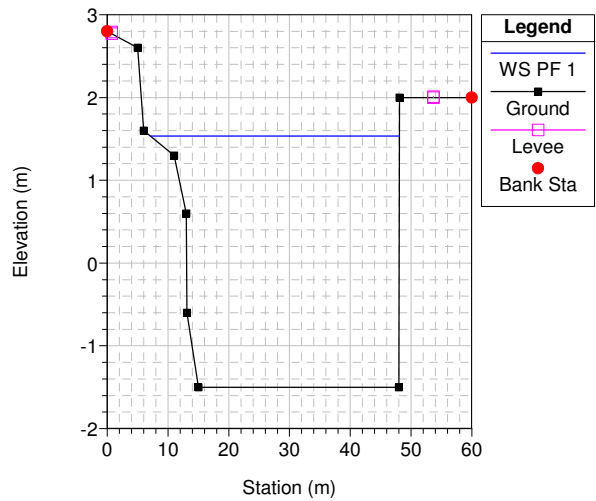
Cornia-vecchia-mar09 Plan: Plan 01 3/30/2009 8:26:02 AM

Geom: corn1 Flow: corn-vec-Tr200
River = Cornia Vecchia Reach = r2 RS = 105



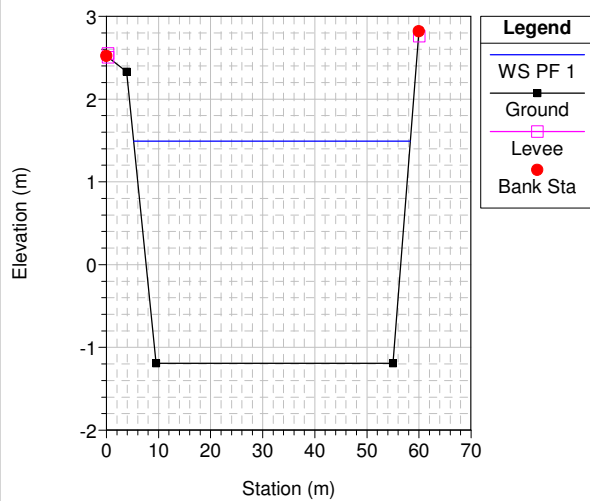
Cornia-vecchia-mar09 Plan: Plan 01 3/30/2009 8:26:02 AM

Geom: corn1 Flow: corn-vec-Tr200
River = Cornia Vecchia Reach = r2 RS = 104



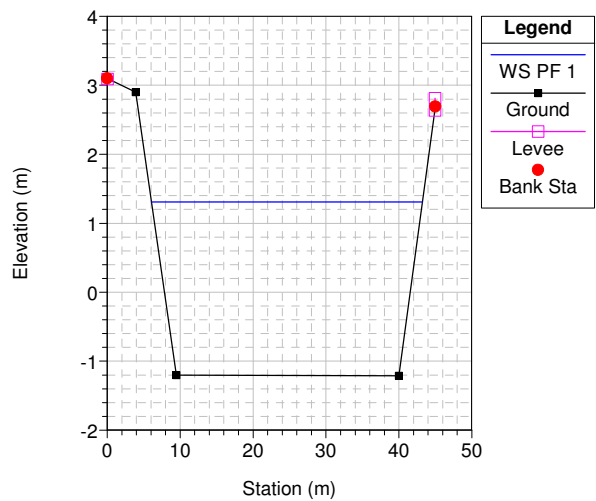
Cornia-vecchia-mar09 Plan: Plan 01 3/30/2009 8:26:02 AM

Geom: corn1 Flow: corn-vec-Tr200
River = Cornia Vecchia Reach = r1 RS = 3 sez3



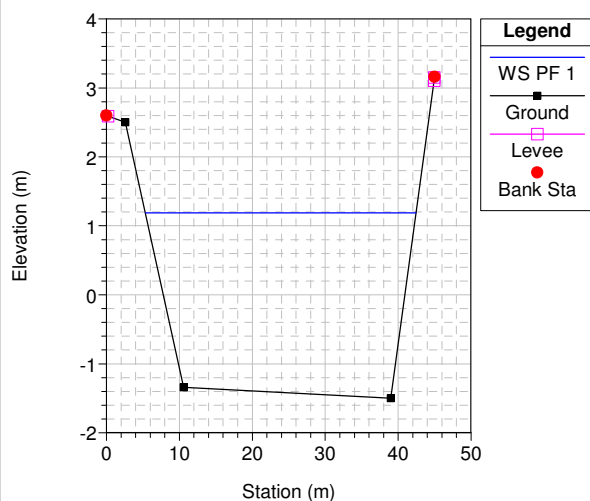
Cornia-vecchia-mar09 Plan: Plan 01 3/30/2009 8:26:02 AM

Geom: corn1 Flow: corn-vec-Tr200
River = Cornia Vecchia Reach = r1 RS = 2 sez2



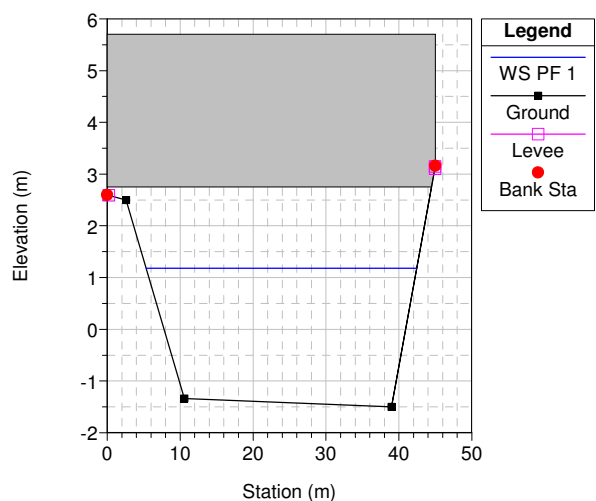
Cornia-vecchia-mar09 Plan: Plan 01 3/30/2009 8:26:02 AM

Geom: corn1 Flow: corn-vec-Tr200
River = Cornia Vecchia Reach = r1 RS = 1 sez1



Cornia-vecchia-mar09 Plan: Plan 01 3/30/2009 8:26:02 AM

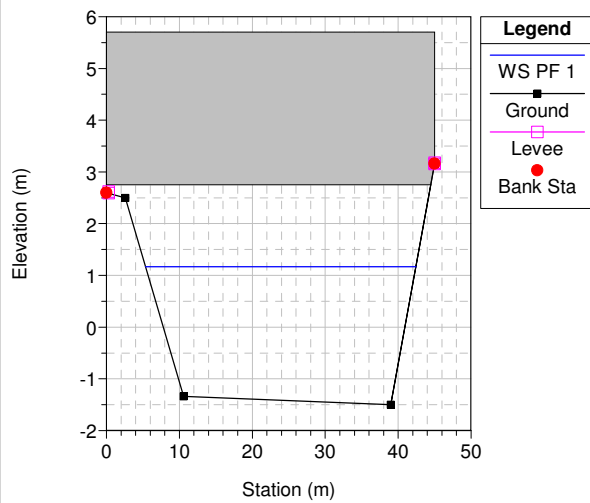
Geom: corn1 Flow: corn-vec-Tr200
River = Cornia Vecchia Reach = r1 RS = 0.95 BR



Cornia-vecchia-mar09 Plan: Plan 01 3/30/2009 8:26:02 AM

Geom: corn1 Flow: corn-vec-Tr200

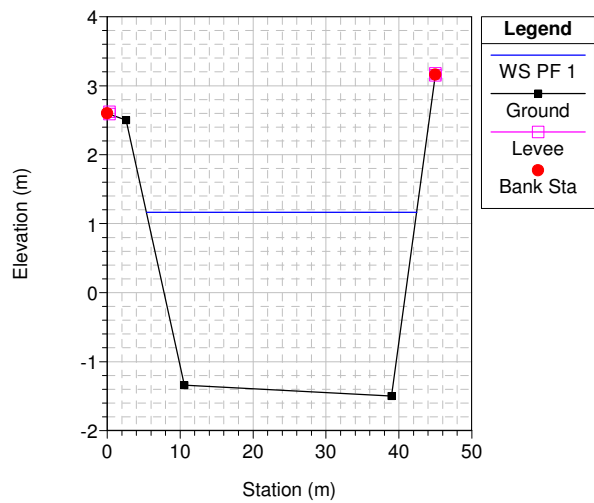
River = Cornia Vecchia Reach = r1 RS = 0.95 BR



Cornia-vecchia-mar09 Plan: Plan 01 3/30/2009 8:26:02 AM

Geom: corn1 Flow: corn-vec-Tr200

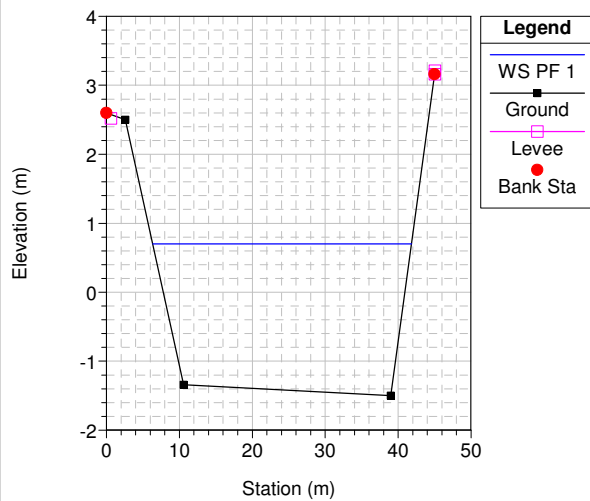
River = Cornia Vecchia Reach = r1 RS = 0.9 sez1



Cornia-vecchia-mar09 Plan: Plan 01 3/30/2009 8:26:02 AM

Geom: corn1 Flow: corn-vec-Tr200

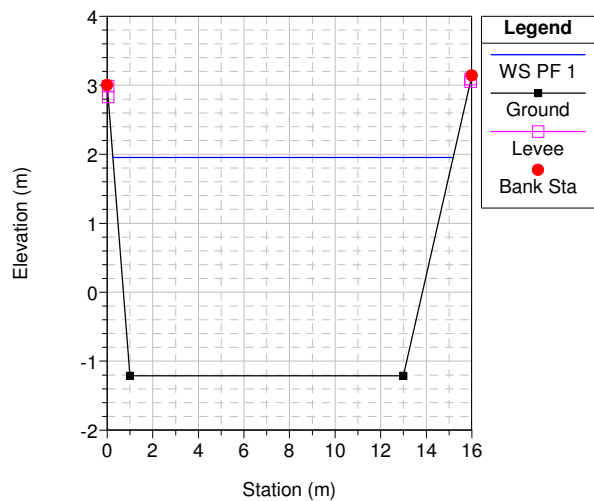
River = Cornia Vecchia Reach = r1 RS = .5 sez1



Cornia-vecchia-mar09 Plan: Plan 01 3/30/2009 8:26:02 AM

Geom: corn1 Flow: corn-vec-Tr200

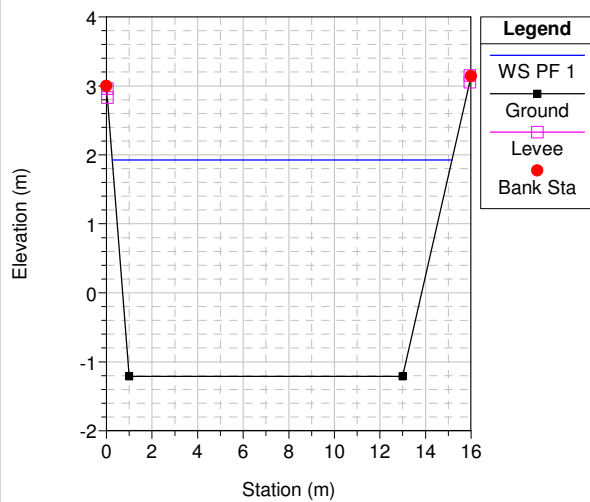
River = Scolmatore Reach = s1 RS = 502



Cornia-vecchia-mar09 Plan: Plan 01 3/30/2009 8:26:02 AM

Geom: corn1 Flow: corn-vec-Tr200

River = Scolmatore Reach = s1 RS = 501



HEC-RAS Plan: Plan 01 Profile: PF 1

River	Reach	River Sta	Profile	Q Total	Min.Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
Scolmatore	s1	502	PF 1	36.00	-1.21	1.95	-0.25	1.99	0.000221	0.85	42.58	14.93	0.16
Scolmatore	s1	501	PF 1	36.00	-1.21	1.93	-0.25	1.96	0.000227	0.85	42.20	14.91	0.16
Cornia Vecchia	r2	106	PF 1	128.00	-1.50	1.73	0.30	1.94	0.001535	2.03	63.08	29.55	0.44
Cornia Vecchia	r2	105	PF 1	128.00	-1.50	1.66	-0.36	1.72	0.000365	1.14	112.06	42.15	0.22
Cornia Vecchia	r2	104	PF 1	128.00	-1.50	1.53	-0.36	1.61	0.000411	1.20	106.91	40.98	0.24
Cornia Vecchia	r1	3	PF 1	168.00	-1.19	1.49	-0.09	1.57	0.000449	1.27	132.26	53.11	0.26
Cornia Vecchia	r1	2	PF 1	168.00	-1.21	1.31	0.22	1.51	0.001237	1.98	85.01	37.15	0.42
Cornia Vecchia	r1	1	PF 1	168.00	-1.50	1.19	0.06	1.38	0.001213	1.97	85.32	37.12	0.41
Cornia Vecchia	r1	0.95	Bridge										
Cornia Vecchia	r1	0.9	PF 1	168.00	-1.50	1.16	0.06	1.37	0.001249	1.99	84.49	37.05	0.42
Cornia Vecchia	r1	.5	PF 1	168.00	-1.50	0.70	0.06	1.01	0.002455	2.48	67.66	35.48	0.57
Cornia vecchia	r3	208	PF 1	92.00	-0.50	2.75	1.34	2.88	0.001798	1.63	56.55	43.00	0.45
Cornia vecchia	r3	109	PF 1	92.00	-1.45	2.56	0.43	2.65	0.000608	1.33	69.12	30.82	0.28
Cornia vecchia	r3	106	PF 1	92.00	-1.50	1.86	-0.04	1.96	0.000662	1.37	67.14	30.12	0.29
Allacciante	a2	407	PF 1	76.00	-1.50	3.32	1.24	3.39	0.000836	1.11	68.38	50.00	0.30
Allacciante	a2	406.5	PF 1	76.00	-1.50	1.40	1.24	2.25	0.007986	4.09	18.60	8.94	0.90
Allacciante	a1	406.2	PF 1	40.00	-1.50	1.50	0.40	1.71	0.001950	2.05	19.50	9.12	0.45
Allacciante	a1	406.1	Bridge										
Allacciante	a1	406	PF 1	40.00	-1.50	1.45	0.40	1.67	0.002074	2.10	19.05	9.03	0.46
Allacciante	a1	405	PF 1	40.00	-1.50	1.59	-1.02	1.60	0.000026	0.32	123.53	43.21	0.06
Allacciante	a1	404	PF 1	40.00	-1.50	1.59	-1.02	1.59	0.000026	0.32	123.91	43.53	0.06